

one difficulty by creating a greater. I think the controversy which has been raised, and the investigation to which it has led, have opened the eyes of many to the possibility that the normal heart even may undergo changes formerly unthought of. It is surely not unreasonable to suppose that a widely dilated heart, whose wall has become thinned out, and whose muscular fibre has lost elasticity and tone, may vary in size according to the pressure acting on it from within, may yield when that pressure becomes greater, and may retract if that pressure becomes by any means greatly lessened.¹ In one case, I am satisfied I saw the evidences of such changes, indicated both by alteration in the marked-out boundaries and in the position of the apex-beat as well, the two observations having been made within an hour of one another, the first before the patient had risen, and the second after he had dressed and walked down to the bath-house, the strain of walking bulging out the heart and displacing the apex-beat.

(*To be continued.*)

THE RATIONAL AND COMPREHENSIVE STUDY OF THE HEPATIC SYSTEM.

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(*Concluded from page 422.*)

IV. CLINICAL INVESTIGATION AND PHENOMENA.—The methodical study of the hepatic system from a clinical point of view, on comprehensive lines, demands careful and intelligent attention, not only in the abstract, and in relation to its several diseases, but also in every individual case with which the practitioner has to deal. The casual and unsatisfactory manner in which this system is, I might almost say, habitually regarded in ordinary practice, and the want of definite knowledge with respect to important clinical facts, lead to grave errors in diagnosis, negative and positive; while treatment is often founded upon mere “jumping at conclusions,” on altogether inadequate data, or, indeed, upon little more than guess-work. And before proceeding further, I must emphatically protest against making the “liver” a “specialty,” for which in the large majority of cases there is not the slightest foundation or excuse. The investigation of this organ, and indeed of the entire hepatic apparatus, is as a rule well within the scope of every properly trained practitioner, if he will only take the

¹ Refer to Leith's paper, *loc. cit.*, p. 760.

trouble to carry it out in an intelligent and rational manner. Of course, difficult cases do occur now and then, in which the opinion of some one who has had opportunities of studying hepatic affections under special circumstances, for example, in tropical climates, may be of considerable weight; or where the help of a surgeon of experience, or possibly even of the "pathological chemist," may be necessary to clear up the diagnosis; but such cases are quite exceptional, and can be dealt with on their own merits.

A. Symptomatology.—At the outset it is most desirable to have a clear and definite knowledge of the symptoms which may be associated with the hepatic system, and which are presented, either singly or in various combinations, in particular cases. Further, it is important to learn and to endeavour to understand the symptomatology, positive and negative, of the several diseases affecting this system, as described in text-books or special treatises. The fact cannot be too strongly insisted upon that in some affections of the liver, even of a pronounced character, anything like definite symptoms are, as a rule, entirely absent, their absence being easily explained. The same statement applies to the gall bladder and cystic duct not uncommonly; but any interference with the hepatic or common duct, or with the portal vein, is most likely to attract attention at once. Certain liver diseases are usually attended with prominent local symptoms, and we expect to meet with them, but it is again a remarkable fact that even in these diseases such symptoms may be entirely absent or in no way significant, at any rate for a time, and until the morbid changes have made considerable progress. Hence the importance of personal physical examination of the hepatic structures, should there be any reason to suspect that they are the seat of organic mischief; while they certainly should not be ignored when passing lives for insurance or other allied purposes, especially as age advances, and when "habits" are doubtful.

It is not my intention to deal with hepatic symptoms at any length, or to discuss the symptomatology of individual diseases. I desire, however, to offer a few remarks about certain of the more prominent phenomena, more especially to illustrate and emphasise the necessity of always regarding the hepatic system from a comprehensive standpoint. Before doing so, it may be convenient to present the following summary of possible symptoms, as a basis of discussion:—

1. Painful or other sensations in the hepatic region, or "referred" to some other locality.

2. Definite "biliary" symptoms, due to some disorder affecting the secretion or discharge of bile, especially jaundice and its accompaniments in various degrees.

3. Phenomena indicating more or less difficulty involving the portal circulation, especially actual obstruction. Apart from indefinite digestive disorders and bowel disturbances, which no

doubt are frequently due to this cause, those more positively referable to portal obstruction include—

(a) Ascites, with chronic peritoneal inflammatory changes in course of time. (It may be noted that the peritoneal veins become dilated, and internal hæmorrhage has occurred from their rupture in exceptional instances, but such an event would probably only be discovered post-mortem.)

(b) Dilated superficial abdominal veins after a while, especially when there is abundant ascites, which may extend to the lower part of the thorax.

(c) Hæmatemesis, melæna, or both, sometimes very grave.

(d) Hæmorrhoids, according to generally accepted ideas, liable to bleed.

(e) Enlargement of the spleen, often well marked and permanent, with increased firmness.

(f) Menorrhagia, in some instances probably owing to the anatomical venous communications.

4. Symptoms connected with the alimentary tract—mouth and tongue; odour of breath; and gastro-enteric disorders, indicating more or less definite morbid changes, resulting from different causes originating in the hepatic system.

5. General symptoms, subjective and objective; as well as remote phenomena associated with independent organs or systems.

6. Changes in the urine.

7. Symptoms due to physical interference with neighbouring structures, or to special lesions.

I propose now to offer a few observations on each of these groups of symptoms.

1. Any *subjective sensations* referred to the hepatic region should always be regarded with rational caution, and studied on intelligent lines. Pain and tenderness, especially the latter, are, as is well known, likely to be associated with certain diseases of the liver, whatever the actual cause of the sensations may be; or there is merely a feeling described as fulness, heaviness, weight, tension, and the like, generally associated with enlargement or certain displacements of the organ. To jump to the conclusion, without due investigation, that such sensations referred to the right hypochondrium or its vicinity, especially pain, are necessarily associated with the hepatic system at all, and still more with the liver itself, is a dangerous but very common error, and I have known not a few grave mistakes in diagnosis result from this tendency. Thus they have turned out to be connected with affections of the stomach, intestines, pancreas, kidney, or peritoneum; or severe pain, supposed to be of hepatic origin, has merely been one of the initial symptoms of pleurisy with effusion, or lobar pneumonia.

Assuming that subjective sensations have been definitely located in the hepatic structures, it then becomes necessary to try to understand their significance and actual cause, and this particularly

applies to pain and tenderness. The term "hepatalgia" has been used very vaguely, but more especially to indicate a supposed neuralgia. It may be confidently asserted, however, that there is no such pain associated with any part of the hepatic system, apart from some physical or pathological change to account for it. With regard to the liver itself, when it is painful or tender, the sensation is, as a rule, really perihepatic or peritoneal, rather than in the substance of the organ. This superficial pain is more particularly due to tension or stretching of tissues, or to inflammatory changes.

The severe painful attacks associated with the passage of gall stones, known as *hepatic colic*, are as a rule highly characteristic, and the practitioner must always be prepared to meet with them. Apart from such attacks, however, the presence of a more or less constant or frequent pain in the right hypochondrium, with or without tenderness, if it can be definitely referred to the hepatic system, points much more commonly to the gall bladder than to the liver, and is always suspicious of gall stones. But, as illustrating a further difficulty, I may mention a case which I saw in consultation, and which was subsequently operated upon by my friend and colleague, Mr. A. E. Barker. The patient, a female beyond middle age, had suffered for a long period from pain in this locality, subject to marked exacerbations, but without any other evident symptoms, or any signs to be detected on physical examination. The diagnosis seemed to point pretty clearly to gall stones, to which I personally inclined, though feeling by no means certain. An eminent physician, however, gave a most positive and absolute opinion in favour of such a diagnosis. Nevertheless the operation proved that he was wrong, for there was no trace of a biliary calculus anywhere, and the pain was found to be due to a definite fibrous thickening and adhesion in the vicinity. This was loosened and manipulated; the patient made an excellent recovery, and was entirely cured of her pain.

It may be regarded as the height of incredulity and heterodoxy to cast any doubt on the connection between "shoulder-pain" and liver affections, which has been such a favourite notion with the profession and the laity from time immemorial. I have no hesitation in affirming, however, that its frequency is greatly exaggerated; and to place reliance, in a routine fashion, upon pain in the right shoulder as a factor in the diagnosis of hepatic disorder or disease is likely to prove extremely misleading, from several points of view. That it may be associated with actual organic disease of the liver is highly probable, and the connection can be readily explained. But it really is quite amusing to note how the laity, and indeed, not uncommonly, members of the medical profession, are disposed to attribute every painful or other sensation, not only in the right shoulder but in the left, between the scapulæ, or indeed over any part of the chest,

especially its posterior aspect, or even the lumbar region, to "disordered liver," when it is obviously of an entirely different nature, and often definitely associated with the superficial structures. I have several times known grave anginal attacks attributed to this organ, to the decided disadvantage of the patient.

2. *Biliary symptoms.*—Jaundice is obviously one of the most prominent and important symptoms to be studied in relation to the hepatic system, and modern investigations seem to prove conclusively that there is no such variety as "hæmatogenous jaundice," but that this condition, where at all pronounced, is invariably associated with some actual morbid state affecting different parts of the biliary apparatus. I have no intention of discussing jaundice in its several aspects, but only desire to draw attention to certain practical points relating to it as a symptom. When present, it should of course always be duly investigated on definite and systematic lines, as regards its mode of onset, tendency to recurrent attacks, degree of intensity, course and duration, whether temporary or permanent and progressive; also taking into consideration the accompanying phenomena, both subjective and objective. There is one part of the investigation which is often carried out in a very casual manner, if at all, and that is, examination of the stools. It cannot be too strongly insisted upon that the alvine evacuations demand careful observation in cases of jaundice, not merely once in a way, but during their entire course. The slighter degrees of icterus, giving rise to the appearance commonly described as "bilious," are chiefly evidenced by the colour of the eyes, and by indications of the presence of bile in the urine, and it is in these directions that clinical inquiry must then be conducted. When jaundice is pronounced, the general discoloration is, as a rule, quite characteristic, but it must be borne in mind that it may be modified by its association with cyanosis, anæmia, cutaneous hæmorrhages, peculiar pigmentations, malarial cachexia, the effects of a tropical sun, or other abnormal colorations.

Jaundice being present, no matter in what degree, the laity almost invariably assume that it is directly due to some morbid state of the "liver," and a similar tendency is by no means uncommon amongst medical practitioners. Therefore, as a striking illustration of the essential importance of taking a comprehensive view of the hepatic system, it will be well to emphasise the fact, that in the large majority of cases jaundice and its accompaniments are not the result of liver disease at all, but of some physical interference with the escape of bile after its formation—as a rule, of course, the result of various obstructive conditions involving the hepatic or common bile duct, with subsequent excessive absorption. Indeed, the more healthy the liver is, and the more vigorously it acts as a secreting organ, the more pronounced are the phenomena of jaundice likely to be under the circumstances.

It is a remarkable fact that the hepatic secreting structures may be practically destroyed extensively or throughout, as in advanced cirrhosis, yet with scarcely even an icteric tint. There are certain diseases of the liver with which jaundice may be directly associated, but then bile is usually either pent up within its own ducts and tissues, as in some forms of hypertrophic cirrhosis, or one of the larger ducts is directly obstructed, as by a growth or fibrous thickening from chronic perihepatitis. In acute yellow atrophy the rapid breaking down of the bile-containing hepatic tissues accounts for the accompanying jaundice.

The fact is quite familiar that bile is secreted under exceedingly low pressure, and a very slight difficulty, whether in the course of its passage towards the intestine, or at the orifice of the common duct, will prevent its proper discharge. This is well exemplified by cases of so-called "catarrhal jaundice," which, in my opinion, constitute a real and definite group, though attempts have been made to cast a doubt upon them; and temporary jaundice may probably arise from kinking of the duct. In a large proportion of instances, however, the obstruction is much more pronounced, and its cause is often obvious enough, gall stones having again to be particularly borne in mind in this connection, though other possible causes, especially those due to morbid conditions in the vicinity, must not be forgotten in doubtful cases.

It seems highly probable that a certain degree of icteric tint may be due to excessive absorption of bile from the intestinal canal, following undue retention as a consequence of accumulation of fæces, but such a condition cannot give rise to anything like pronounced jaundice. It must be remembered that even in cases of marked jaundice the stools may be quite normal in colour, showing the presence of bile in quantity; and this fact may be of importance in arriving at a correct diagnosis, as in the following interesting case which came under my care at University College Hospital. The patient exhibited the external manifestations of this symptom in considerable intensity, but the stools were quite satisfactory in colour and other characters, and there was evidently no interference with the escape of bile by the ducts. The symptoms and physical signs pointed clearly to gastric cancer; and further examination showed that the left lobe of the liver was implicated throughout, while the right lobe seemed altogether free. This was the diagnosis I arrived at; and I pointed out to my clinical class that the icterus was directly due to the disease of the left lobe, while the right lobe secreted bile in good quantity, which was discharged without difficulty into the intestinal canal. The post-mortem examination entirely confirmed this view of the morbid conditions present.

When what appears to be originally a simple catarrhal jaundice becomes prolonged and practically chronic, as well as very pronounced, there must always be the fear that the cause of

the obstruction has been from the first of a more serious nature, or that subsequent morbid changes have taken place rendering it permanent and irremediable. Cases, however, do occasionally occur, of which I have met with some striking examples, showing that even after a long period, it may be many months, jaundice supposed to be of catarrhal origin, but which had given no indication of being influenced by any kind of treatment, may ultimately disappear of its own accord, and for no apparent reason, confirming therefore the original diagnosis.

The well-known general subjective sensations associated with jaundice are of much interest, but I must refrain from discussing their significance on the present occasion. Amongst them the bitter taste, which is complained of often in connection with so-called "biliousness," as well as in cases of definite icterus, deserves particular attention, but it will be more convenient to refer to this sensation in relation to the alimentary canal.

In contrast to jaundice and its accompaniments, we sometimes meet with cases in which there is an excessive flow of bile, giving rise to bilious diarrhœa or vomiting, or both. It is customary to attribute these phenomena also to a "bilious attack," or to some liver disorder or disease, which is obviously absurd, for they clearly indicate that the organ must be in good working order, so far as the biliary function is concerned, and to me it seems inconceivable that they can be the consequence of excessive secretion as an independent condition. As a matter of fact, bilious vomiting is practically the result of violent sickness, due to various causes, an act which of course does tend to promote the discharge of bile, and to force it through the pyloric orifice into the stomach. Bilious diarrhœa may also follow excessive action of the bowels, of different kinds, but chiefly occurs when an obstruction to the escape of bile is suddenly removed, leading to an abundant flow, or as the result of the action of some powerful cholagogue.

3. The phenomena which result from *obstruction of the portal circulation* constitute a separate and definite group of symptoms of the greatest importance in relation to the hepatic apparatus. In contrast with jaundice, they are in the large majority of cases the direct consequence of disease of the liver itself, especially some form of cirrhosis, the ramifications of this circulation in the interior of the organ being compressed or obliterated more or less extensively. The fact must not be forgotten, however, that the portal trunk and its main divisions are liable to be immediately obstructed, either by pressure from without, changes in their walls, or thrombosis and its consequences. Such conditions may be associated with hepatic disease, or are occasionally quite independent. In cirrhotic cases it is highly probable that the portal vein itself is thus obstructed much more commonly than is usually supposed. Another illustration of the necessity for always regard-

ing the hepatic system comprehensively is afforded by primary or idiopathic thrombosis of the portal and contributory veins, which, though exceptional, does occur occasionally. A very interesting and instructive case of this nature is reported by Dr. Bertram Rogers of Bristol.¹

A certain degree of portal difficulty may arise from the side of the hepatic vein, as the result of prolonged congestion from cardiac disease; but until more definite secondary changes are set up in the liver, this can hardly be recognised clinically. When, however, such changes become pronounced in heart cases, the evidences of portal obstruction may be a predominant clinical feature. It may be remarked in passing that obstruction of the hepatic venous system from cardiac back pressure cannot be recognised by any definite symptoms, but it is sometimes indicated by what should be regarded rather as a physical sign, namely, the "pulsation" presented by an enlarged liver.

I do not propose to discuss in detail the individual phenomena which may result from portal obstruction, but desire to draw attention to a few practical points. Ascites is of course by far the most common symptom of a definite nature coming under this category, and it is often the first positive manifestation of the existence of hepatic disease. As a rule, it is essentially chronic in its onset and course; but it is remarkable how acutely it may set in sometimes, for no obvious immediate reason, in cases where no doubt the morbid changes in the liver have been of long duration. Very rapidly developed ascites may follow portal thrombosis, and this may be the explanation of some of the cases just alluded to. It used to be thought, and indeed is a very prevalent belief to-day, that peritoneal dropsy following portal obstruction is practically a hopeless condition, and *prima facie* it certainly looks as if such were the fact. I have, however, pointed out in previous writings on the subject that the fluid may be got rid of, not only temporarily but permanently, by treatment in not a few instances, although the obstruction remains as a permanent condition, the blood returning by other channels. I believe that one explanation of the difficulty experienced in treating ascites successfully is that the circulation through the portal trunk and its main divisions is directly interfered with, either by thrombosis or pressure by fibrous thickening; and that the outlook is much more hopeful if the obstruction is entirely confined to the branches in the liver itself. Another difficulty no doubt arises from the development of chronic peritoneal changes, especially after repeated paracentesis, which in course of time may become very pronounced.

I have been surprised to find that it is by no means an uncommon notion that œdema of the legs is one of the direct consequences of portal obstruction. Of course, this is an entirely erroneous idea, but it is important to bear in mind that consider-

¹ *Bristol Med.-Chir. Trans.*, June 1899.

able anasarca, or even œdema of the abdominal walls, may occur as a secondary event, due to pressure of a large peritoneal accumulation upon the inferior vena cava and iliac veins, which completely disappears after paracentesis. In exceptional instances, however, œdema of the legs becomes permanent in cases of cirrhosis or malignant disease of the liver, as the result of compression of the inferior vena cava by fibrous thickening or a growth. When ascites is an outcome of hepatic changes secondary to cardiac disease, it naturally as a rule follows anasarca, but not invariably. Moreover, I have met with some striking cases of cardiac dropsy, which, beginning in the ordinary way, have ultimately become cases of mere extreme ascites, the external œdema disappearing entirely. This course of events must obviously indicate that the secondary hepatic changes have become very pronounced.

Dilatation of the superficial veins varies a good deal in its degree and extent in cases of portal obstruction. As already indicated, it usually follows an abundant ascites, but not always; and the enlarged veins will probably remain after this condition has been quite cured by treatment.

Hæmorrhage into the stomach, intestinal canal, or both, is a most important result of portal obstruction, and I do not think that its gravity is always appreciated as it ought to be, though, of course, it may be slight or moderate in amount. Gastric hæmorrhage is the usual event, which may be immediately due to different lesions, and if not at once fatal, is revealed by hæmatemesis, followed by melæna, some of the blood passing through the pyloric orifice into the intestines, and being ultimately discharged per anum in its changed form. The following points of practical interest have been exemplified by cases which have come under my observation. Profuse hæmatemesis may be the first definite symptom revealing the presence of advanced hepatic cirrhosis, perhaps not even suspected, but clearing up the significance of previous attacks of so-called "indigestion," "biliousness," and what not. I have known this event occur in the case of females addicted to secret drinking. The hæmatemesis may prove fatal, but it is remarkable what an amount of blood may be lost, and yet recovery take place. In other instances the hæmorrhage supervenes in a case of extreme ascites, indicating grave portal obstruction, which shows the danger of delay in performing paracentesis under such circumstances—a lesson I was once severely taught by a case under my care at University College Hospital. A man was admitted for ascites from cirrhosis, of large amount, but as there did not seem to be any immediate urgency, I, for certain reasons, postponed tapping until the following day. Early in the morning, however, profuse hæmatemesis suddenly set in, almost immediately terminating fatally. Again, ascites may be entirely cured, and death result from gastric hæmorrhage after a variable interval. A very interesting and instructive case of this kind happened in

the practice of the late Dr. Young of Rome, when he resided in Florence. Acting on my suggestion, he performed paracentesis for extreme cirrhotic ascites due to alcohol, when the patient was almost moribund, in spite of the strongest protests from other medical men who were in consultation. The result somewhat astonished them, and was most satisfactory, for the peritoneal dropsy was completely cured by the single tapping. I saw the patient some six weeks afterwards in my consulting-room in London, when his cirrhotic liver could be felt as plainly as possible, and I duly warned him as to his habits. However, he was subsequently seen by a "fashionable physician," who informed him that there was nothing the matter with his liver! Consequently he resumed his intemperate habits. There was never any return of the ascites, but Dr. Young informed me that the patient died some three years afterwards, suddenly, from hæmatemesis, while sitting at the dinner table!

With regard to independent intestinal hæmorrhage, according to Frerichs it is specially liable to occur after portal thrombosis, giving rise to a bloody diarrhœa. Such hæmorrhage, which may prove fatal, is also met with in that rare class of cases in which clotting takes place in the mesenteric veins and their tributary branches before they join the portal system.

The direct connection between hæmorrhoids and some difficulty affecting the portal circulation, whether it be merely "sluggish" or actually "obstructed," is an idea very generally accepted, and it must appear the rankest heresy to cast any doubt upon it, especially when bearing in mind the anatomy of the venous circulation. I venture to affirm, however, that in the large majority of cases of piles, the "liver" at any rate does not deserve the sole blame usually attached to this organ, but that other much more definite cause or causes can be found, which partly or entirely account for the condition. I can affirm, moreover, from personal observation, that in the most extreme cases of hepatic cirrhosis with portal obstruction I have ever met with, hæmorrhoids were conspicuous by their absence. Nor does there seem to be any valid reason for thinking that piles associated with portal difficulties are specially liable to bleed.

The pathological relations of the spleen to the hepatic system are highly interesting and important. I cannot, however, discuss them here, and will only call attention to the definite connection between enlargement of this organ and portal obstruction.

4. *Alimentary canal.*—Apart from the more definite phenomena already discussed, the consequences of pronounced biliary disorders or portal obstruction, a number of vague symptoms connected with the alimentary tract are commonly attributed to the "liver." They include more or less anorexia, or depraved appetite; an unpleasant or bitter taste; a large and thickly furred tongue; a turgid, congested condition of the mouth and throat, with formation of much

viscid mucus ; offensive breath ; epigastric discomfort or tenderness ; nausea, vomiting, or retching, especially in the early morning ; flatulence and eructations, or the passage of much foul gas per anum ; acidity and heartburn ; constipation, diarrhœa, or irregularity of the bowels, with unhealthy stools. That affections of the hepatic system, taken as a whole, may act injuriously upon the alimentary canal, cannot be doubted for a moment, and they may not only originate symptoms but also actual morbid changes, such as congestion of the mucous membrane, catarrh, or even more serious conditions. These may be set up by mere biliary derangement, quite apart from actual jaundice ; from more or less sluggishness or congestion of the portal system, not sufficient to produce the more characteristic manifestations of portal obstruction ; and in all probability from disturbance of hepatic functions other than the biliary. Moreover, it may be noted that interference with the portal circulation will sooner or later affect the pancreas ; and, according to Mayo Robson, chronic pancreatitis is often associated with gall stones. Any secretory disorders associated with this organ, thus set up, must necessarily tell upon the digestive process in the intestinal canal. But, granting all this, I affirm unhesitatingly that the very prevalent tendency to attribute the phenomena I have mentioned to "the liver," especially its "functional disorders," to "biliousness" and the like, has in the majority of cases no reliable foundation, and is often absolutely wrong and misleading ; as a matter of fact, they are quite commonly due to some definite morbid condition of the digestive tract itself, either local or more or less diffuse. This may be accompanied with hepatic disease or disorder, but the liver is in many instances perfectly normal in every respect. I have known many serious gastric cases, even cancer, treated for "liver" ; and indeed the historical case of Napoleon I. is a prominent illustration of this point. But beyond this, the alimentary canal is often being persistently injured by the same causes as those which are damaging the hepatic structures, particularly errors in diet and alcoholic excess, and yet this aspect of the case is entirely ignored. There seems to be a general impression that the digestive tract can stand anything, and the pathological changes which must inevitably result sooner or later from the direct and repeated action of what are really strong irritants are often altogether forgotten or disregarded. The injurious treatment accordingly directed to the liver adds to the irritation. With regard to the mouth, though usually very pronounced in cases of jaundice, the phenomena associated with this region, attributed to the liver, are frequently due to obvious local causes, such as complete neglect of cleanliness or attention to the teeth, or bad teeth ; or to habits, not forgetting, in addition to alcoholism, excessive smoking, or an irrepressible fondness for nasty medicines. I have on not a few occasions been astonished and amused to hear a medical man deplore in a despondent tone

how he "had done his utmost to clean the tongue by acting upon the liver," but without any effect, when the "furred tongue" had evidently nothing whatever to do with this organ, and his efforts in this direction must inevitably lead to disappointment. The bitter taste, which may be associated with jaundice, or is complained of independently, demands a word of special comment. It has been generally supposed to be directly due to bile, but observations by Brunton and others seem to show that freshly secreted bile is not bitter. Substances are found in the intestines during digestion which are bitter; these are absorbed by the portal system and conveyed to the liver, where they are turned back, and again excreted with the bile, which thus acquires its bitter taste. If the power of the organ to arrest these substances is exceeded, some of them get into the general circulation, and a bitter taste may probably be thus accounted for in some instances.

In certain acute diseases of the hepatic system, of a grave nature, the alimentary canal is liable to be prominently affected, and the tongue may assume a typhoid character, or a red and glazed aspect. These phenomena are, however, evidences of the general effects of these complaints, and have no local significance. In cases even of advanced chronic liver disease it by no means follows that this canal is in any way disturbed, and I have met with numerous instances in which morbid changes seem to have almost entirely destroyed the structural and functional integrity of the organ, and to have caused marked portal obstruction, and yet the stomach and intestines performed their work in a most satisfactory manner in every respect; the appetite was excellent; and the tongue presented a perfectly healthy appearance. I have such cases under my observation at the present time.

5. *General and remote symptoms.*—In the introductory remarks to this article, I ventured to criticise the prevalent irrational tendency to attribute to "the liver" all sorts of symptoms, general and remote, subjective and objective, which have no direct connection with this organ. That an important practical relationship does exist between these classes of phenomena and the hepatic system should of course be fully recognised, but I must here again emphatically insist upon the necessity of always exercising particular caution in dealing with this aspect of a case, and of regarding it with some measure of intelligent consideration and common sense. It is impossible to discuss the subject satisfactorily within a limited space, and I can only offer a few general comments.

(a) In certain forms of pronounced liver disease, either with definite local symptoms, or only recognised by physical examination, the absence of general symptoms may be of great significance in diagnosis.

(b) The presence, degree, and course of one or more of the ordinary objective general symptoms or conditions common to all structures are, on the other hand, in many instances of

essential diagnostic importance. Special attention should be paid to pyrexia, septicæmia, wasting, anæmia, a sallow or cachectic appearance, and a tendency to purpuric hæmorrhages. With these may be associated corresponding subjective sensations of languor, fatigue, weakness, and the like. In some obscure cases of gall stones, hepatic abscess, or pylephlebitis, febrile or septic phenomena are of peculiar significance. The wasted, sallow, cachectic appearance of a patient suffering from advanced cirrhosis, with the enlarged venules on the face, is often strikingly characteristic. It is remarkable, however, how well cirrhotic subjects may look, or how they may improve under treatment in aspect and condition. In this connection it must be noted that general symptoms associated with disease of the hepatic apparatus are in many cases due, not so much to the local trouble, if at all, as to the very nature of the disease, such as cancer, which may also affect other parts at the same time; or to the constitutional condition of which it is a manifestation, such as malarial cachexia or syphilis. I am afraid that loss of flesh, and weakness, attributed to the liver, are sometimes due to the active lowering treatment practised, with the view of setting this organ right.

(c) The general symptoms indicative of collapse are likely to accompany the passage of gall stones; and are now and then the result of sudden grave lesions of the liver or gall bladder.

(d) The phenomena included under the term *cholæmia* are of a special nature, and no doubt are the manifestation of a peculiar toxæmia, whatever its exact nature may be. They may or may not be associated with jaundice, and are by no means in proportion to its degree, when it is present.

(e) Of the various subjective sensations, or disturbances of functions—cutaneous, nervous, circulatory, respiratory, or associated with the special senses—which are referred to the liver, it is impossible to speak in any definite manner. When there is marked jaundice, we expect certain feelings to be complained of, such as itching, lassitude, debility, mental depression, and possibly yellow vision; and the presence of bile in the blood does undoubtedly tend to depress the action of the heart, it may be seriously. It is highly probable that general or remote symptoms may result from interference with other hepatic functions besides the biliary, and the phenomena regarded as due to lithæmia are thus explained by many pathologists, as well as certain other supposed toxic conditions. The precise relation of the liver to attacks of “sick headache” and allied conditions is difficult to determine, and probably differs in different cases. That head-symptoms may be due to this organ is likely enough in certain cases. “Specks before the eyes” are very commonly attributed to functional hepatic disorders, but on no adequate grounds. They may certainly have an altogether different explanation. I have heard a “liver cough” sometimes spoken of, but apart from the

physical effects of a "big liver," or certain special lesions, there is no foundation whatever for such a notion. Not only may cutaneous sensations be associated with hepatic troubles, but different eruptions may no doubt be thus originated. A form of xanthoma follows prolonged jaundice in rare instances, of which I have only met with one example.

6. *Changes in urine.*—That the urine has important physiological and pathological relations to the hepatic system, cannot be doubted, but in this direction again there is a tendency to superficial and hasty generalisations and conclusions, on unreliable data, and not warranted by facts. This excretion is often perfectly normal in every respect when the liver is in a state of advanced disease, and appears to be to all intents and purposes quite incapable of performing any of its functions. At the same time, it ought always to be intelligently studied, within due limits, in connection with both functional and organic affections of the hepatic apparatus as a whole. The more scientific investigation of the urine will be referred to presently, and here it will suffice to point out the chief objective changes which are regarded as having a symptomatic relation to this system. The most definite are of course those due to admixture of bile, more or less evident and characteristic in proportion to its amount. An unusually dark colour of urine, produced by certain pigments, has also been attributed to the liver. The abnormal condition most commonly referred to this organ, is discharge of excess of uric acid, giving rise to a deposit of this substance or of urates on standing; an abundant precipitation of "pink lithates" being looked upon as specially significant. No doubt such an association does often exist, but to attribute deposit of lithic acid or lithates to the liver in all cases is manifestly wrong and misleading. With reference to portal obstruction, another erroneous notion which I have sometimes come across is that such obstruction directly impedes the renal circulation, and so interferes with the proper secretion of urine. While warning against this error, it may be worth while drawing attention to the fact that abundant ascites resulting from this cause, by pressing upon the renal veins, does not uncommonly diminish the urinary discharge, and modify its characters, things resuming their normal state after paracentesis. It must not be forgotten that the kidneys are frequently themselves actually diseased along with the liver, or they are affected by the same cause, such as cardiac disease, an important fact to be always kept in mind from a clinical point of view, in relation to any abnormal changes which the urine may exhibit.

7. *Symptoms due to physical interference with neighbouring structures, or to special lesions.*—I need only allude to this group of phenomena very briefly, so as to complete the outline of the symptomatology of the hepatic system, and to draw attention to the necessity of not losing sight of them altogether in certain

cases. Abdominal symptoms may result from the physical effects of a displaced or very large liver or a "hepatic tumour"; of fibrotic changes in the vicinity, associated with cirrhosis or perihepatitis; or of gall stones. The last-mentioned may undoubtedly cause intestinal obstruction, of which I have met with one very pronounced case; and in two cases I have known them lead to dilatation of the stomach and its consequences. Hepatic enlargement in an upward direction may give rise to obvious chest symptoms; and should an abscess or hydatid cyst rupture in this direction, they are likely to be very prominent. When a communication forms with the lung, cough with characteristic expectoration ensues. A liver abscess or purulent collection in the gall bladder may burst into different structures within the abdomen, or on the external surface, with corresponding symptoms. Perforation or rupture of the gall bladder into the peritoneum will be attended with the usual phenomena indicative of such a lesion. An external biliary fistula is occasionally formed, or is left after operation.

B. Physical and other methods of skilled examination.—Skilled examination directed to the hepatic apparatus can be conducted on systematic and definite lines, and I desire now to offer a few practical remarks upon this aspect of its clinical investigation.

1. *Physical examination.*—It would appear reasonable that the first and most obvious step which suggests itself, should there be reason to suspect the existence of any morbid condition of the hepatic system, is to make a personal physical examination from without, by the ordinary methods. Yet my observation compels me to say that, even when symptoms are evident enough, this simple course of procedure is often entirely neglected. And here, again, I must draw emphatic attention to the fact already alluded to, of the frequency with which symptoms are absent or indefinite, while physical examination at once reveals some more or less serious disease. I have been greatly struck by the number of cases of hepatic cirrhosis which are practically latent, or spoken of as "congestion of the liver," but which are thus easily and positively recognised. To find unsuspected gall stones in the gall bladder is, as I have already intimated, not at all uncommon; and sometimes they are in large numbers. In exceptional instances, one comes upon albuminoid disease, a hydatid tumour, malignant disease, a greatly distended gall bladder, or other pronounced morbid conditions, not to mention those of a less serious nature. The lesson as to the necessity of making it a rule to examine systematically, before at any rate jumping to the conclusion that the liver is merely "functionally disordered," is obvious.

It cannot be too strongly insisted upon that physical examination of the hepatic apparatus is, in the large majority of cases, quite easy and simple, provided the investigator has had an average training in carrying out the recognised methods, and in

applying them to the several structures within the abdomen. Any claim to special skill in this direction should always be regarded with suspicion. Morbid conditions of the liver are not infrequently more or less visible on inspection; but palpation and percussion are of course the methods upon which we mainly rely for positive and definite information. Under certain circumstances, and especially if there is much ascites, the procedure known as "dipping" is of much value, for feeling this organ; and at the same time it may be pressed forward from behind. Auscultation is only of direct service now and then, but it must not be ignored altogether, and of course it is of material help when the liver encroaches upon the thorax. Assuming that physical examination is being carried out, here again comes in the essential importance of regarding the hepatic system comprehensively, and not fixing attention solely and exclusively on the liver. At any rate the gall bladder should never be forgotten, for it is not uncommonly affected independently, or is involved along with this organ. With regard to gall stones, which should always be particularly borne in mind, not only may they be detected in the gall bladder, but, in exceptional instances, I have felt one lodged in the duct. It is hardly possible to make out any morbid condition of the portal vein by direct examination, though, of course, the prominent effects of its obstruction—ascites and enlarged spleen—are thus recognised. I have never personally met with any case in which aneurysm of the hepatic artery or enlarged glands in the portal fissure could be detected by physical examination; but such conditions might possibly be made out during life under favourable circumstances.

The limitations of this article will not permit any detailed discussion of the physical examination of the liver and gall bladder, which are the structures with which we have practically to deal in the ordinary run of cases; and it must be taken for granted that any one who peruses it is familiar with the normal physical signs, as well as with those of the chief diseases to which these structures are liable. It need scarcely be said that in health the gall bladder cannot be felt. Without further comment, I submit, in tabular form, what I think may be regarded as a practical arrangement of the abnormal conditions to be looked for and studied in relation to the liver and gall bladder respectively, from the point of view of physical examination:—

1. LIVER.

(1) Displacement or Malposition—

(a) Simple.

(b) With increased mobility.—Floating Liver; Ptosis of Liver.

(2) Abnormal fixation by adhesions.

(3) Alteration in shape or marked deformities, due to external pressure, by tight-lacing, belts, occupation, etc.; or sometimes probably congenital.

- (4) Changes due to disease—
- (a) In size :
 - (i) Enlargement.
 - (ii) Diminution or contraction.
 - (b) In outline and shape.—Change in general contour ; various superficial irregularities ; depressions or scars ; local prominences or protuberances ; umbilication.
 - (c) In tactile characters.—Increased consistence or firmness ; marked hardness or induration ; abnormal softness, sometimes with sense of pitting ; local feeling of elasticity or fluctuation.
 - (d) Special signs :
 - (i) Pulsation, associated with the hepatic venous system.
 - (ii) Friction fremitus or sound, elicited by respiratory movements.
 - (iii) Hydatid fremitus.
- (5) Various combinations.
2. GALL BLADDER.
- (1) Slight fulness or enlargement.
 - (2) Marked dilatation or distension with fluid.
 - (3) Hypertrophy or thickening of walls, with dilatation.
 - (4) Adhesion to neighbouring parts, with enlargement.
 - (5) Accumulation of gall stones.
 - (6) A solid mass, due to morbid growth or other conditions.

There are a few practical points to which I desire briefly to refer, relating to physical examination of the hepatic system, and what it reveals.

(1) While fully appreciating the necessity and essential value of this method of investigation, the practitioner must be prepared to meet with negative results, even though symptoms are prominent, and this may be an important factor in diagnosis. Moreover, he must always be on his guard against making too much of what is thus discovered, with respect to the liver, and forming hasty conclusions without due deliberation. When this organ comes to an unusual extent below the margin of the thorax, as determined by palpation and percussion, undoubtedly the general tendency is at once to conclude that it is "enlarged," in proportion to the level to which its lower border reaches. Should it happen to be altered in shape at the same time, a very grave diagnosis will probably be arrived at. As a protest against such tendencies, I must draw emphatic attention to the malpositions and changes in shape mentioned in the foregoing table, but more especially to hepatic displacement in a downward direction. The frequency with which I have known such displacement, even when obvious enough, mistaken for enlargement, has forced upon me the conviction that it is seldom even thought of, and in the conclusions formed by certain writers the same error is evident. Now, as a matter of fact, depression of the liver from various causes, while at the same time its normally upper surface becomes more anterior, is of very common occurrence. Indeed, I have often known it come down to, or even below, the umbilicus,

and yet be perfectly healthy in its structure. Further, when the organ is enlarged, it is frequently more or less displaced at the same time, and unless this combination is recognised, a much exaggerated idea is formed as to its actual size. This statement applies particularly to cases in which the hepatic conditions are secondary to intrathoracic diseases. Unfortunately a wrong diagnosis in this direction usually leads to energetic, but quite uncalled for and probably mischievous treatment, for it seems almost impossible to resist the temptation to try to reduce a supposed "big liver" to its normal size by "active measures!"

The pronounced "floating or wandering liver" is only exceptionally met with, but it must not on that account be altogether forgotten—a lesson which I was taught many years ago by a case in which I made a wrong diagnosis as to the nature of an intra-abdominal "tumour," from having at that time had no experience of the condition from personal observation. The reader may be referred to an abstract of an interesting communication on "floating liver" by Dr. Max Einhorn¹; and also to a clinical lecture by Treves² on what he terms "ptosis of the liver," signifying a sinking down or dropping of the organ in the abdominal cavity, with certain changes in shape.

Displacement of the liver in an upward direction occurs in connection with certain abdominal conditions, but no difficulty in diagnosis ought to arise under such circumstances. Sometimes all signs of the organ in front disappear; in other instances extension of dulness towards the chest reveals its abnormal situation.

(2) Should enlargement of the liver be definitely made out, and as a rule it can be readily recognised when present, further investigation is always demanded, on systematic lines, in order to determine its actual nature and significance, so far as this is possible. To rest content with a mere diagnosis of "enlarged liver" is wholly inadequate. It must be borne in mind that the increase in size may be due to more than one morbid change. The chief points to be noted are, whether there is tenderness on pressure or not, with its degree, if present; the extent and directions of the enlargement; its outline and shape, whether normal and smooth, or presenting any of the irregularities mentioned in the table; its tactile characters; and whether it exhibits any special signs. In certain cases the subsequent course of events must be taken into account, any changes which hepatic enlargement undergoes while under observation being duly studied. In this connection it is important to remember that the increase in size may take place mainly or even entirely towards the chest, especially in cases of hydatid tumour or abscess, which is made out practically by examination of this region in the usual way. Such examination should not, however, be carried out in a casual manner, and attention to minor details may be of conspicuous service in

¹ *Clin. Journ.*, London, Oct. 4, 1899.

² *Lancet*, London, 1900.

arriving at a positive diagnosis. For instance, not long ago I was able to express a confident opinion as to the existence of a hydatid tumour of the liver encroaching upon the thorax, by noting—(1) that a feeling of fluctuation could be detected by placing the hand over the ribs posteriorly, and tapping with the fingers gently in front; and (2) that although at first it appeared as if there was absolute dulness extending a considerable way up the chest, with loss of the usual pulmonary signs, more careful investigation showed that there was still some degree of resonance on percussion, and a definite though weak breath sound was audible to the extreme base, proving that some lung tissue intervened between the source of dulness and the surface. The correctness of the diagnosis was proved by a most successful operation. The supposed convex outline of the upper border of the dulness due to enlarged liver encroaching upon the thorax, while worthy of attention and consideration, cannot always be relied on in practice.

When enlarged liver is associated with pronounced jaundice, particular care must be taken to determine its real nature. Here again the tendency is to refer the jaundice to hepatic mischief, when the increase in size may be merely the result of obstruction in the hepatic or common duct, with consequent accumulation of bile.

Neighbouring conditions which are known to simulate hepatic enlargement must be duly taken into consideration in any doubtful case, both abdominal and thoracic; and it must not be forgotten that they may be combined in the same case. As bearing upon this point, and also as affording another striking illustration of the importance of always regarding the hepatic structures comprehensively, the reader is referred to a most interesting and practical communication on "Supra-hepatic abscess" by Cantlie.¹ He describes the condition as "the formation of pus between the layers of the broad ligament of the liver," and speaks of it as "that form of so-called liver abscess which arises independently of dysentery." Another condition to be specially borne in mind is subphrenic abscess on the right side.

(3) Diminution in the size of the liver need only be very briefly noticed, but it must not be forgotten in relation to physical examination. In all probability the organ cannot then be felt, which materially adds to the difficulty in diagnosis of certain cases of atrophic cirrhosis in young subjects, simulating tuberculous disease of the peritoneum. Under such circumstances, as well as in acute yellow atrophy, the contraction or shrinking of the liver can only be determined positively, if at all, by the diminution or absence of hepatic dulness. I am convinced, however, that a cirrhotic liver which is distinctly contracted or "atrophic" can, not uncommonly, be clearly made out by palpation through the abdominal wall, and its characteristic features thus fully appreci-

¹ *Brit. Med. Journ.*, September 9, 1899.

ated. Here, again, I must protest against the fallacy of supposing that because the organ can be felt below the margin of the thorax, it must be of necessity enlarged. One other point may be noted, namely, that in some instances the liver is not really altered in size in one direction or the other to any appreciable degree, but careful palpation reveals physical signs, as regards shape and tactile characters, which demonstrate that the organ is organically diseased, it may be seriously.

(4) The gall bladder should always receive particular and independent attention, and it is necessary to be prepared to find this organ affected while the liver is perfectly normal. Its less pronounced morbid conditions can only be made out by very thorough and careful digital examination, if at all, but they certainly might be more frequently detected than they are, if systematically looked for, and I specially allude to suspicious cases of gall stones. In not a few instances the signs are quite distinct and definite; and it is remarkable what a large collection of these bodies may be found on examination, the existence of which has entirely escaped observation, accompanied, it may be, with marked tenderness. A most interesting but uncommon class of cases are those in which the cystic duct is blocked by a calculus, followed by accumulation of fluid in the gall bladder, with distension, until ultimately a cyst of considerable dimensions may be formed. It is usually free from tenderness; and absence of jaundice is a striking feature. I happened to have two such cases under my observation within a short period, which were successfully operated upon. With regard to the feeling of a solid mass associated with the gall bladder, gall stones generally constitute one factor, which may accompany either fibroid thickening or malignant disease, and it is important to bear in mind the fact already mentioned, that the latter may be secondary to these bodies. As a rule this viscus, when enlarged, is more or less movable from a fixed point under the liver edge, but in certain conditions it becomes adherent and cannot be altered in its position, which may lead to some difficulty in diagnosis.

(5) When prominent symptoms are present, indicating obstruction of the bile ducts or portal system, or both, physical examination of the abdomen must be directed not only to the hepatic system itself, but to the detection and investigation of morbid conditions in the neighbourhood, which might interfere directly with the common duct or the portal trunk. From this point of view the pancreas is an important organ to be always kept in mind.

2. *Examination of urine and fæces.*—In addition to the general observation of the urine and fæces already discussed, it may be necessary, in relation to the clinical investigation of the hepatic system, to examine the discharges chemically and microscopically, but more particularly the former. There is at the present day a tendency in some quarters to exaggerate the value

of this line of investigation, and to claim for it a predominating importance over other methods. While fully appreciating the help it affords in suitable cases, I have no hesitation in affirming that, in the large majority of instances, there is no occasion for any elaborate procedures, and all that may be required is fully within the capacity of any well-trained practitioner. To what extent they may be called for in particular and exceptional cases must be left to individual inclination and discretion.

With regard to the urine, the chief abnormal conditions to be looked for in connection with hepatic affections are—

(a) The presence of *bile*, which may be detected in small quantity in certain cases where there is no evidence of jaundice. It has been affirmed that bilirubin may be formed in excess in connection with disordered liver function, and found in the urine.

(b) Excessive discharge of *uric acid* and *urates*, which it may sometimes be worth while to test quantitatively, microscopical examination being also indicated when deposits form.

(c) Deficiency, or, on the other hand, excess of *urea* under different circumstances, according to some writers. It has been affirmed that the former is due to organic disease, the latter to functional disorder of the liver.

(d) *Glycosuria*.—Whatever be the exact pathology of sugar in the urine, there can be no doubt that in many instances it has an important relation to the glycolytic function of the liver. There is no definite connection, however, between glycosuria and any particular organic disease, and sugar is seldom present even in the most serious and advanced hepatic affections.

(e) *Albuminuria*.—This condition is believed to be one of the effects of functional derangement of the liver, and probably with reason. At the same time, caution is always necessary in referring albuminuria to this cause; and it is particularly important to remember that it may be indicative of renal disease, even when there is hepatic trouble, while the liver and kidneys are not uncommonly the seat of similar structural changes. Temporary albuminuria is a definite result of pressure upon the renal veins by abundant ascites, due to portal obstruction.

(f) *Leucine and Tyrosine*.—The presence of these substances in the urine is specially associated with acute yellow atrophy, but they are not invariably found in this complaint.

It would not serve any useful purpose to attempt to discuss here the special examination of the stools in relation to the hepatic system. The abnormal characters and changes associated with the absence or deficiency of bile in the intestinal canal demand attention, and the faeces are then unusually offensive. Unaltered bile pigment is not found in healthy stools, and its presence is always abnormal. Whether interference with the biliary functions accounts to any degree for the discharge of undigested fat or other elements of food is a doubtful point. Examination of the faeces for gall stones

is of course highly important, and it might be necessary to further investigate supposed bodies of this nature chemically and microscopically. In exceptional instances a discharge of pus from the hepatic apparatus takes place by the bowel; or hydatid structures may be discovered in the stools.

3. *Use of the Röntgen rays.*—This modern method of clinical investigation can be applied to the hepatic apparatus with advantage in certain cases. I have personally been more than once indebted to it for confirming or clearing up a difficult and uncertain diagnosis; and there can be no doubt but that we may anticipate valuable help in this direction in an increasing degree, with enlarged experience, and in proportion as skiagraphy becomes more systematically employed, and more definite and reliable in its results.

4. The hepatic system affords a conspicuous example of the essential service which may be rendered for diagnostic purposes by *operative procedures* of different kinds. The result may be negative as well as positive, and, in illustration of this fact, I have already mentioned an interesting and instructive case of supposed gall stones where none were found. In not a few instances the operation merely confirms a diagnosis previously made, and is a preliminary to further measures in the way of operative treatment. I do not propose to intrude upon the domain of the surgeon by attempting any discussion of the procedures that may be called for under different circumstances; and having called attention to the subject, in order to complete the summary of the clinical investigation of the hepatic apparatus, I must refer the reader to surgical works for further information. I will merely remark that some discretion is necessary in having recourse to any serious operation, and it should not be practised unless there is a reasonable expectation that it may lead to some practical advantage in the way of treatment.

CONCLUDING REMARKS.—When I started preparing this article, the primary object I had in view was to endeavour to counteract the erroneous, and what I must regard as highly mischievous, ideas prevalent about morbid conditions of the liver and their manifestations; and to claim for the hepatic system, as a whole, rational consideration and methodical examination, founded on intelligent knowledge and adequate skill. I have, however, been led into a discussion of various points, especially relating to the clinical phenomena connected with this system, and their practical investigation. I now venture to affirm that, with due attention to the etiological and clinical facts bearing upon any individual case, it seldom happens that a confident and sufficiently accurate diagnosis for all practical purposes cannot be made. Occasionally, of course, difficulties arise, and even puzzling conditions are met with, especially in connection with the liver itself. In very fat subjects

it is not uncommonly quite impossible to make a satisfactory local examination, and we have to come to a conclusion on other data. Difficulty may further occur from the rarity or unusual character of a hepatic disease, which is evident enough; from the combination of two or more morbid conditions; or from a want of a clear and definite etiological and pathological history, of which I have recently had a conspicuous example. I should have liked to have completed this communication by discussing the treatment of hepatic complaints from a comprehensive standpoint, but for the reason already stated I must leave this aspect of the subject for a future occasion. I will only remark once more, in conclusion, that I do not desire in the least to under-estimate the importance of "functional disorders" or "minor ailments" connected with the hepatic system, which, if neglected, may unquestionably lead to more serious troubles. Most of these can be prevented or remedied by attention to diet, drink, exercise, and habits generally. I dare say, however, that the majority of people are none the worse for an occasional clearing out of the biliary apparatus by some efficient "cholagogue," especially a bile expellent; or for a dose now and then of some preparation which stimulates a sluggish portal circulation, or acts as a "portal depletant." It is against the habitual and irrational employment of such measures, for no adequate reason, that I must once again emphatically protest.

THE TREATMENT OF THE COUGH IN PULMONARY CONSUMPTION.¹

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To the lay mind the main characteristic of pulmonary consumption is the cough, and it is possibly in consequence of this that phthisical patients are exposed to such indiscriminate drug treatment for the relief of this symptom. My excuse for writing on such an exceedingly trite subject is the conviction, acquired by watching students at St. George's Hospital and qualified men in my out-patient room at the Brompton Hospital for Consumption, that a considerable number of medical men are apt to treat a cough in a phthisical person with a large variety of drugs, without making any very careful investigation as to its cause. It is a common experience for me, after asking even a qualified man to examine a patient complaining of a cough, to be told that although there are no physical signs of any pulmonary disorder in the chest, an expectorant mixture would not be amiss. I generally ask whether the throat has been examined, and often find that, although no

¹ Read before the Cambridge Medical Society, March 1901.